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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,119	08/22/2001	Les E. Atlas	UNIV0119	1042
25268	7590	02/23/2006	EXAMINER	
LAW OFFICES OF RONALD M ANDERSON 600 108TH AVE, NE SUITE 507 BELLEVUE, WA 98004			WARE, CICELY Q	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/938,119

Applicant(s)

ATLAS ET AL.

Examiner

Cicely Ware

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-28 is/are allowed.
- 6) ☒ Claim(s) 1-5, 12, 13 and 29-36 is/are rejected.
- 7) ☒ Claim(s) 6-11, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claim 1 and 13 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 12-13, 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda et al. (US Patent 5,303,058) in view of Dent (US Patent 5,831,977).

(1) With regard to claim 1, Fukuda et al. discloses a method for encoding a signal for storage or transmission, comprising the steps of: (a) implementing a two-dimensional transform of the signal, producing a transform matrix having modulation frequency as one dimension (col. 1, lines 38-45, col. 2, lines 3-14); (b) reducing a dynamic range of the signal (col. 2, lines 25-28; (c) quantizing and selecting coefficients included in the transform matrix (col. 1, lines 57-68-col. 2, lines 1-2, col. 5, lines 29-40, col. 6, lines 10-18).

However Fukuda et al. does not disclose producing data packets in which the coefficients that have been selected are encoded based upon a desired order of the coefficients, with coefficients that are more perceptually relevant being used first to fill each data packet and coefficients that are less perceptually relevant being handled in one of the following ways: (i) discarded once an available space in each data packet that is to be stored or transmitted has been filled with the coefficients that are more perceptually relevant; and (ii) disposed last within each data packet, so that the coefficients that are less perceptually relevant can subsequently be truncated from the data packet.

However Dent discloses producing data packets in which the coefficients that have been selected are encoded based upon a desired order of the coefficients, with coefficients that are more perceptually relevant being used first to fill each data packet and coefficients that are less perceptually relevant being handled in one of the following ways: (i) discarded once an available space in each data packet that is to be stored or transmitted has been filled with the coefficients that are more perceptually relevant; and (ii) disposed last within each data packet, so that the coefficients that are less perceptually relevant can subsequently be truncated from the data packet (col. 6, lines 6-39, col. 10, lines 30-35, 51-67).

Therefore it would have been obvious to one of ordinary skill in the art to modify Fukuda et al. to incorporate producing data packets in which the coefficients that have been selected are encoded based upon a desired order of the coefficients, with coefficients that are more perceptually relevant being used first to fill each data packet

and coefficients that are less perceptually relevant being handled in one of the following ways: (i) discarded once an available space in each data packet that is to be stored or transmitted has been filled with the coefficients that are more perceptually relevant; and (ii) disposed last within each data packet, so that the coefficients that are less perceptually relevant can subsequently be truncated from the data packet in order to allow the addition of redundancy (Dent, col. 6, lines 6-10).

(2) With regard to claim 2, claim 2 inherits all the limitations of claim 1. Dent further discloses wherein the step of implementing the two-dimensional transform produces a phase matrix and a magnitude matrix, said magnitude matrix having the modulation frequency as one of its dimensions and including a mean spectral density function of the signal (col. 9, lines 56-67 – col. 10, lines 1-50).

Examiner asserts that in packet communications the two-dimensional transform inherently comprises a phase matrix and a magnitude matrix.

(3) With regard to claim 3, claim 3 inherits all the limitations of claim 2. Dent further discloses determining weighting factors for use in reducing the dynamic range of the signal, based upon a perceptual model (col. 6, lines 6-39, col. 9, lines, 55-68 – col. 10, lines 1-50).

(4) With regard to claim 4, claim 4 inherits all the limitations of claim 3. Dent further discloses determining the weighting factors comprises the step of using the perceptual model to compute weighting factors from coefficients of the mean spectral density function (col. 6, lines 6-39, col. 9, lines 55-68 – col. 10, lines 1-50).

(5) With regard to claim 5, claim 5 inherits all the limitations of claim 3. Dent further discloses converting the weighting factors to a logarithmic scale, and thereafter, quantizing the weighting factors (col. 9, lines, 55-68 – col. 10, lines 1-67, col. 11, lines 13-37).

(6) With regard to claim 12, claim 12 inherits all the limitations of claim 2. Fukuda et al. further discloses quantizing the magnitude matrix to produce a quantized magnitude matrix, wherein the step of producing the data packets comprises the step of coding the quantized magnitude matrix with one of fixed code and a variable length code (col. 1, lines 58-68 – col. 2, lines 1-68).

(7) With regard to claim 13, claim 13 inherits all the limitations of claim 1. Fukuda et al. further discloses producing the data packets includes the step of ordering the data corresponding the signal with respect to their perceptual relevance so that data having lower modulation frequencies and lower base-transform frequencies are inserted into a data packet before data having higher modulation frequencies and higher base-transform frequencies (col. 1, lines 58-68 – col. 2, lines 1-68).

(8) With regard to claim 29, see rejection of claim 1 and 1.

(9) With regard to claim 30, claim 30 inherits all the limitations of claim 29. Dent further discloses enabling a bit resolution of the data packets that defines the capacity of the data packets to be selectively scaled as a function of the data transmission bandwidth of a network over which the data packets are transmitted (col. 5, lines 60-67- col. 6, lines 1-67, col. 7, lines 1-6, col. 16, lines 31-41).

(10) With regard to claim 31, claim 31 inherits all the limitations of claim 29. Dent further discloses enabling a bit resolution of the data packets that defines the capacity of the data packets to be selectively scaled as a function of a capacity of the available storage in which the data packets are stored (col. 5, lines 60-67-col. 6, lines 1-67, col. 7, lines 1-6, col. 16, lines 31-41).

(11) With regard to claim 32, claim 32 inherits all the limitations of claim 29. Dent further discloses decoding the data packets to recover the data to create a perceptible signal adapted to provide a perceptible experience by a user, loss of the perceptually less important data from the data packets being perceptually less noticeable in the perceptible signal as perceived by the user than would be a loss of perceptually more important data (col. 5, lines 60-67-col. 6, lines 1-67, col. 7, lines 1-6).

(12) With regard to claim 33, claim 33 inherits all the limitations of claim 29. Dent further discloses storing data packets from which the perceptually less important data have been excluded in a storage (col. 5, lines 60-67-col. 6, lines 1-67, col. 7, lines 1-6, col. 16, lines 31-41).

(13) With regard to claim 34, claim 34 inherits all the limitations of claim 29. Dent further discloses transmitting data packets from which the perceptually less important data have been excluded, over a network (col. 5, lines 60-67-col. 6, lines 1-67, col. 7, lines 1-6, col. 16, lines 31-41).

(14) With regard to claim 35, claim 35 inherits all the limitations of claim 29. Dent further discloses truncating perceptually less important data from the data packets as necessary to accommodate an available data transmission rate for a network channel

over which the data packets are to be transmitted (col. 5, lines 60-67-col. 6, lines 1-67, col. 7, lines 1-6, col. 16, lines 31-41).

(15) With regard to claim 36, claim 36 inherits all the limitations of claim 35. Dent further discloses wherein perceptually less important data are truncated from the data packet to achieve a data packet size sufficiently small so that the data packets are transmitted over the network channel in a continuous stream and so that the data conveyed by the data packets are adapted to be perceptually experienced by a user in real time as the data packets are received (col. 5, lines 60-67-col. 6, lines 1-67, col. 7, lines 1-6).

***Allowable Subject Matter***

3. Claims 6-11, 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses a method for encoding a signal for storage or transmission. Prior art references show similar methods but fail to teach: **“the step of inverse quantizing the weighting factors to produce inverse quantized weighting factors”**, as in claim 6; **“preparing the mean spectral density function for quantization using the inverse quantized weighting factors; and quantizing the means spectral density function thus prepared, producing a quantized mean spectral density function”**, as in claim 7; **“the quantized mean spectral density function is also encoded into the data**



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**packets”, as in claim 8; “producing an inverse quantized mean spectral density function”, as in claim 9; “processing the inverse quantized mean spectral density function with the perceptual model to produce bit allocations used for encoding the data packets”, as in claim 10; “quantizing the phase matrix and the magnitude matrix using a number of bits determined by the perceptual model”, as in claim 11; “(a) transforming even numbered window sequences by a discrete cosine transform to form an even transform sequence; (b) transforming odd numbered window sequences by a discrete sine transform to form an odd transform sequence; and (c) forming an orthogonal complex pair by combining the even transform sequence with the odd transform sequence”, as in claim 14; “applying a second transform to the orthogonal complex pair”, as in claim 15.**

4. Claims 16-28 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses a method for encoding a signal for storage or transmission. Prior art references show similar methods but fail to teach: **“determining an inverse quantized mean spectral density using the quantized mean spectral density; deriving bit allocations from the inverse quantized mean spectral density using a perceptual model”, as in claims 16, 22; “inverse quantizing the magnitude matrix and the phase matrix; adding the template models to the inverse quantized magnitude matrix said inverse quantized phase matrix and a result produced by thus adding comprising a two-dimensional transform; inverting the two-**

**dimensional transform; and performing post processing to yield a pulse code modulated signal corresponding to the perceptual signal", as in claim 27.**

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

***Cicely Ware***

cqw  
February 21, 2006

  
CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER